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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,626	12/15/2003	Kyoung-Ho Woo	P-0615	2024

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EXAMINER	
MILORD, MARCEAU	
ART UNIT	**PAPER NUMBER**
2618	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,626	WOO, KYOUNG-HO	
	Examiner	Art Unit	
	Marceau Milord	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 12-14, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett et al (US Patent No 6473624 B1) in view of Longoni et al (US Patent No 6493564 B2).

Regarding claim 1, Corbett et al discloses a method for controlling power of radio links (figs 1-2, figs. 5-6) comprising: determining (12 and 14 of fig. 1) reliability of a plurality of radio links according to a quality of each radio link (col. 3, lines 36-64; col. 5, lines 24-61).

However, Corbett et al does not specifically disclose the steps of setting a combined transmit power control command value based on the determined reliability of each of the plurality of radio links.

Longoni et al, on the other hand, discloses a method and system for performing power control in a mobile communication network comprising at least one base station and a network element connected to the base station, wherein a reliability information is transmitted from the at

least one base station to the network element, the reliability information defining a quality of a radio transmission between the at least one base station and a mobile terminal. Based on the transmitted reliability information, the network element determines a variation of a target set point for power control and transmits a power control command defining the variation of the target set point to the at least one base station (col. 2, lines 1-64;col. 3, lines 25-53). Moreover, the BS comprises a power control means which performs the closed loop power control in order to adjust the transmission power of the MS on the basis of a setting command supplied from a target setting means (col. 4, lines 22-44; col. 5, lines 49-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of to the communication system of Corbett in order to provide a method for performing a flexible power control.

Regarding claims 12-14, Corbett et al discloses a method for controlling power of radio links (figs 1-2, figs. 5-6) in a mobile communication system comprising: measuring a quality of a radio link; setting a reliability of the radio link based on the measured quality of the radio link; repeating measuring the quality of the radio link (col. 3, lines 36-64; col. 5, lines 24-61); and setting the reliability of the radio link until the reliability of all the radio links are set; and determining a combined transmit power control command value based on the reliability of each radio link

However, Corbett et al does not specifically disclose the steps of setting a combined transmit power control command value based on the determined reliability of each of the plurality of radio links.

Longoni et al, on the other hand, discloses a method and system for performing power control in a mobile communication network comprising at least one base station and a network element connected to the base station, wherein a reliability information is transmitted from the at least one base station to the network element, the reliability information defining a quality of a radio transmission between the at least one base station and a mobile terminal. Based on the transmitted reliability information, the network element determines a variation of a target set point for power control and transmits a power control command defining the variation of the target set point to the at least one base station (col. 2, lines 1-64;col. 3, lines 25-53). Moreover, the BS comprises a power control means which performs the closed loop power control in order to adjust the transmission power of the MS on the basis of a setting command supplied from a target setting means (col. 4, lines 22-44; col. 5, lines 49-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of to the communication system of Corbett in order to provide a method for performing a flexible power control.

Regarding claim 22, Corbett et al discloses a mobile communication system (figs 1-2, figs. 5-6) comprising: a processor device to determine a reliability of each of a plurality of radio links based on quality of each of the links (col. 3, lines 36-64; col. 5, lines 24-61).

However, Corbett et al does not specifically disclose the steps of setting a transmit power control value based on the determined reliability of each radio link; and a transmitting device to transmit signals based on the set transmit power control value.

Longoni et al, on the other hand, discloses a method and system for performing power control in a mobile communication network comprising at least one base station and a network

element connected to the base station, wherein a reliability information is transmitted from the at least one base station to the network element, the reliability information defining a quality of a radio transmission between the at least one base station and a mobile terminal. Based on the transmitted reliability information, the network element determines a variation of a target set point for power control and transmits a power control command defining the variation of the target set point to the at least one base station (col. 2, lines 1-64;col. 3, lines 25-53). Moreover, the BS comprises a power control means which performs the closed loop power control in order to adjust the transmission power of the MS on the basis of a setting command supplied from a target setting means (col. 4, lines 22-44; col. 5, lines 49-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of to the communication system of Corbett in order to provide a method for performing a flexible power control.

3. Claims 2-11, 15-21, 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett et al (US Patent No 6473624 B1) in view of Longoni et al (US Patent No 6493564 B2) as applied to claims 1-2 above, and further in view of Fiorini et al (US Patent No 6760596 B1).

Regarding claims 3-11, Corbett and Longoni disclose everything claimed as explained above except the steps of measuring the quality of each of the plurality of radio links; and comparing the measured quality of each radio link with a predetermined reference value; wherein when the quality of one radio link is greater than the reference value, determining the reliability includes setting the reliability of the one radio link to 1; wherein when the quality of one radio link is greater than the reference value, determining the reliability includes setting the reliability of the one radio link to 1;wherein when the quality of one radio link is smaller than the

reference value, determining the reliability includes setting the reliability of the one radio link to 0.

However, Fiorini et al discloses a mobile station that decreases its transmit bit rate in response to a determination that its transmit power has exceeded an alarm-power threshold. The mobile station increases its bit rate in response to a determination that its transmit power is below a lower-power threshold. A dynamic lower-power threshold can be employed in which the mobile station estimates or predicts its transmit power if it were to increase its transmit bit rate and increases its transmit bit rate only if this can be performed without exceeding the alarm-power threshold (col. 3, line 36- col. 4, line 20). Furthermore, the mobile station compares a transmit power of the mobile station to two different thresholds, the two thresholds serving to minimize ping-pong effects between different uplink-transmit bit rates. The two different thresholds are an alarm-power threshold and a dynamic lower-power threshold. The mobile station decreases or increases its uplink-transmit bit rates to the next lesser or greater bit rate within a transport format combination set assigned to the mobile station responsive to the transmit power of the mobile station being above the alarm-power threshold or below the lower-power threshold, respectively (it could be set to zero or 1). The lower-power threshold delay can be set at any value, including zero (col. 5, line 61- col. 6, line 40;col. 7, lines 15-65; col. 8, lines 16-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Fiorini to the modified system of Longoni and Corbett in order to provide an adaptive power control technique that ensures a satisfactory quality of communication at a minimum level of interference.

Regarding claims 15-21, Corbett and Longoni disclose everything claimed as explained above except the steps of comparing the measured quality of the radio link with a predetermined reference value; and setting the reliability of each radio link based on the comparison; wherein when the quality of each radio link is greater than the reference value, the reliability of each radio link is 1; wherein when the quality of each radio link is smaller than the reference value, the reliability of each radio link is 0; wherein when the reliability of all the radio links is 1, the combined transmit power control command value is determined to be 1; increasing a transmit power based on the determined combined transmit power control command value; wherein when the reliability of any of the radio links is 0, the combined transmit power control command value is determined to be –1; decreasing a transmit power based on the determined transmit power control command value.

However, Fiorini et al discloses a mobile station that decreases its transmit bit rate in response to a determination that its transmit power has exceeded an alarm-power threshold. The mobile station increases its bit rate in response to a determination that its transmit power is below a lower-power threshold. A dynamic lower-power threshold can be employed in which the mobile station estimates or predicts its transmit power if it were to increase its transmit bit rate and increases its transmit bit rate only if this can be performed without exceeding the alarm-power threshold (col. 3, line 36- col. 4, line 20). Furthermore, the mobile station compares a transmit power of the mobile station to two different thresholds, the two thresholds serving to minimize ping-pong effects between different uplink-transmit bit rates. The two different thresholds are an alarm-power threshold and a dynamic lower-power threshold. The mobile station decreases or increases its uplink-transmit bit rates to the next lesser or greater bit rate

within a transport format combination set assigned to the mobile station responsive to the transmit power of the mobile station being above the alarm-power threshold or below the lower-power threshold, respectively (it could be set to zero or 1). The lower-power threshold delay can be set at any value, including zero (col. 5, line 61- col. 6, line 40;col. 7, lines 15-65; col. 8, lines 16-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Fiorini to the modified system of Longoni and Corbett in order to provide an adaptive power control technique that ensures a satisfactory quality of communication at a minimum level of interference.

Regarding claims 23-31, Corbett and Longoni disclose everything claimed as explained above except the steps of measuring the quality of each radio link and comparing the measured quality of each radio link with a predetermined reference value; wherein when the quality of one radio link is greater than the reference value, the processor device sets the reliability of the one radio link to 1, wherein when the quality of one radio link is smaller than the reference value, the processor device sets the reliability of the one radio link to 0; wherein the processor device repeats determining the reliability of each radio link until the reliability of the radio links of all the radio links is decided, wherein when the reliability of the radio links is 1, the processor device sets the combined transmit power control command value as 1, wherein the processor device increases a transmit power of the transmitting device based on the set transmit power control value, wherein when the reliability of the radio links is 0, the processor device sets the combined transmit power control command value as –1, wherein the processor device decreases a transmit power of the transmitting device based on the set transmit power control value.

However, Fiorini et al discloses a mobile station that decreases its transmit bit rate in response to a determination that its transmit power has exceeded an alarm-power threshold. The mobile station increases its bit rate in response to a determination that its transmit power is below a lower-power threshold. A dynamic lower-power threshold can be employed in which the mobile station estimates or predicts its transmit power if it were to increase its transmit bit rate and increases its transmit bit rate only if this can be performed without exceeding the alarm-power threshold (col. 3, line 36- col. 4, line 20). Furthermore, the mobile station compares a transmit power of the mobile station to two different thresholds, the two thresholds serving to minimize ping-pong effects between different uplink-transmit bit rates. The two different thresholds are an alarm-power threshold and a dynamic lower-power threshold. The mobile station decreases or increases its uplink-transmit bit rates to the next lesser or greater bit rate within a transport format combination set assigned to the mobile station responsive to the transmit power of the mobile station being above the alarm-power threshold or below the lower-power threshold, respectively (it could be set to zero or 1). The lower-power threshold delay can be set at any value, including zero (col. 5, line 61- col. 6, line 40;col. 7, lines 15-65; col. 8, lines 16-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Fiorini to the modified system of Longoni and Corbett in order to provide an adaptive power control technique that ensures a satisfactory quality of communication at a minimum level of interference.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hashem et al discloses a system and method for combining power control commands during soft handoff in DS/CDMA cellular systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 2618